

**Amendment to the Specification**

Please amend the specification as follows:

Page 2, third full paragraph

Optical rotary transmitters in particular benefit from the aforescribed mechanism, which serve to transfer optical signals between a rotating element and an element remaining stationary in relation to the aforementioned element. An optical emitter means, e.g. a LED, which is moved along the path of a ~~fi~~bre ~~fi~~ber optical waveguide, moves along the ~~fi~~bre ~~fi~~ber optical waveguide which remains stationary, and which is preferably bent to form a closed circle and into which fluorescent molecules are embedded. On account of the lateral radiation into the ~~fi~~bre ~~fi~~ber optical waveguide fluorescent light is produced within the ~~fi~~bre ~~fi~~ber, which is equally guided via internal reflections to the ends of the ~~fi~~bre ~~fi~~ber optical waveguide, where respective optical detector means are provided. With that known device it is possible to transfer optical signals between a rotating element and an element remaining stationary relative to the first element.

Page 3, first full paragraph

With the fluorescent light being produced by spontaneous emission, which is induced in the ~~fi~~bre ~~fi~~ber optical waveguide, the bandwidth of the optical signals to be transmitted is limited by the fluorescent life of the dyes in the ~~fi~~bre ~~fi~~ber. If, however, there is the intention to receive optical signals at a maximum bandwidth possible without any loss of information there are limitations in the form of the known fluorescent dyes.

Page 5, second full paragraph

The afore-described light-guiding object designed in accordance with the invention is configured as a ~~fi~~bre ~~fi~~ber optical waveguide along ~~with~~ which an emitter means is guided. The ~~fi~~bre ~~fi~~ber optical waveguide may, for instance, have the ~~shape~~ shape of a circle along

which an emitter means ~~id~~ is displaced which is arranged on an element rotating relative to the ~~fi~~bre fiber optical waveguide.

Page 5, third full paragraph

The material introduced into the ~~fi~~bre fiber optical waveguide, wherein the electron population can be inverted, is optically excited, preferably by means of pumped lasers arranged at the ends of the ~~fi~~bres fibers of the ~~fi~~bre fiber optical waveguides, and changed over into an inverted population state in this manner.

Page 5, fourth full paragraph

The optical signals, which originate from the optical emitter means, are laterally radiated into the ~~fi~~bre fiber optical waveguide which is made of synthetic material in which the light undergoes an elastic dispersion, with the original wavelength being retained. What is essential in this respect is the fact that radiation components are dispersed also in the axial direction of the ~~fi~~bre fiber optical waveguide. This elastically diffused light is now amplified by induced emission over the entire periphery of the circle, so that amplified diffused light is emitted at the ends of the ~~fi~~bre fiber optical waveguides, which has the same wavelength as the coupled-in optical signals. As the amplification is a process of induced emission there is no longer a limitation of the bandwidth, as this would be usual, on account of the restricted fluorescence life, in the known case operating on fluorescent dyes, so that the ~~fi~~bre fiber optical waveguide ring designed in accordance with the invention presents a velocity higher by several orders, which means that optical signals with a high modulation frequency, too, can be received and appropriately evaluated without loss of information.

Page 6, first full paragraph

For the detection of the signal light applied at the ends of the ~~fi~~bre fiber optical waveguides in an amplified form coupler elements are provided which are selective by

wavelength and which ensure the optical decoupling of the pumped light from the joining detector means, which pumped light is required for the stimulation process, is produced by the pumped lasers, and has a wavelength different from the wavelength of the optical signals to be processed.

Page 6, second full paragraph

Apart from the specific application of the inventive device for the reception of optical signals for the field of optical rotary transmission, however, any number of further applications is conceivable. It is possible, for instance, to use the receiver system as position-sensitive and/or orientation-sensitive detector by measuring the signal transit times between the light coupling site and the detector units disposed on both ends of the ~~fi~~bre ~~fi~~ber optical waveguide. The measurement of the signal amplitudes of the light waves propagating within the ~~fi~~bre ~~fi~~ber optical waveguide serves the aforementioned potential detection applications, too, in addition to the measurement of the signal transit times.

Page 6, fifth full paragraph

The ~~fi~~bre ~~fi~~ber optical waveguide, which is schematically indicated by the reference numeral 1 in the figure and which is made of a synthetic material, is shaped so as to form a ring and corresponds to the receiving means for the light of an optical emitter unit moving opposite to the ~~fi~~bre ~~fi~~ber optical waveguide, which emitter unit is not illustrated in the figure. It is assumed that the emitter means couples an optical light signal into the ~~fi~~bre ~~fi~~ber optical waveguide 1 at the site P, which light is then deviated by the aforedescribed elastic dispersion in both directions relative to the ~~fi~~bre ~~fi~~ber axis. In the illustrated embodiment, the materials contained in the ~~fi~~bre ~~fi~~ber optical waveguide 1 and presenting an inverted population are stimulated by optical excitation sources, e.g. a pumped laser PL, so that they contribute to the stimulated light amplification of the optical output signals which are deviated in the axial direction. Couplers WDM selective by

wavelengths are provided for separating the signal light, which emerges at the ends of the fibre fiber optical waveguides, from the pumped laser light.

Page 7, after first full paragraph, please add the following paragraph

Although the invention has been described with reference to a particular arrangement of parts, features and the like, these are not intended to exhaust all possible arrangements or features, and indeed many other modifications and variations will be ascertainable to those of skill in the art.